

AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions, and listings, of claims in the application:

- 1 1. (Currently Amended) A method comprising:
2 receiving, into a capacity planning tool executed in a computer system,
3 configuration information for at least one streaming media server, wherein the configuration
4 information comprises a single file benchmark and a unique file benchmark for the at least one
5 streaming media server, wherein the single file benchmark measures a streaming media server
6 capacity when all clients in a test workload are accessing a single file, and wherein the unique
7 file benchmark measures the streaming media server capacity when each client in the test
8 workload is accessing a different file;
9 receiving, into said capacity planning tool, workload information for a workload
10 of client accesses of streaming media files from a server; and
11 said capacity planning tool evaluating, based on said configuration information, a
12 capacity of the at least one streaming media server for supporting the workload.
- 1 2. (Original) The method of claim 1 wherein said configuration information includes
2 identification of size of memory of said at least one streaming media server.
- 1 3. (Original) The method of claim 2 wherein said configuration information further
2 includes disk configuration of said at least one streaming media server.
- 1 4. (Original) The method of claim 1 wherein said workload information includes
2 identification of number of concurrent client accesses of said streaming media files over a period
3 of time.
- 1 5. (Original) The method of claim 4 wherein said workload information further
2 includes identification of a corresponding encoding bit rate of each of said streaming media files
3 accessed.

1 6. (Original) The method of claim 1 wherein said workload information comprises
2 information from an access log collected over a period of time.

1 7. (Original) The method of claim 1 wherein said evaluating comprises:
2 computing a cost corresponding to resources of said at least one streaming media
3 server that are consumed in supporting the workload.

1 8. (Original) The method of claim 7 wherein said computing said cost comprises:
2 computing a cost of consumed resources for a stream in said workload having a
3 memory access to a streaming media file; and
4 computing a cost of consumed resources for a stream in said workload having a
5 disk access to a streaming media file.

1 9. (Original) The method of claim 1 wherein said evaluating comprises:
2 computing a service demand for said at least one streaming media server
3 supporting said workload.

10. (Currently Amended) A method comprising:
receiving, into a capacity planning tool executed in a computer system,
configuration information for at least one streaming media server;
receiving, into said capacity planning tool, workload information for a workload
of client accesses of streaming media files from a server;
said capacity planning tool evaluating a capacity of the at least one streaming
media server for supporting the workload;
wherein said evaluating comprises computing a service demand for said at least
one streaming media server supporting said workload; and
wherein said computing said service demand comprises computing:

$$Demand = \sum_{i=1}^{K_W} N_{X_{W_i}}^{memory} \times cost_{X_{W_i}}^{memory} + \sum_{i=1}^{K_W} N_{X_{W_i}}^{disk} \times cost_{X_{W_i}}^{disk},$$

wherein the workload W comprises $X_W = X_1, \dots, X_{k_w}$ set of different encoded bit
rates of files served in the workload, $N_{X_{W_i}}^{memory}$ is a number of streams in the workload having a
memory access to a subset of files encoded at X_{W_i} Kb/s, $cost_{X_{W_i}}^{memory}$ is a cost of consumed
resources for a stream having a memory access to a file encoded at X_{W_i} Kb/s, $N_{X_{W_i}}^{disk}$ is a number
of streams in the workload having a disk access to a subset of files encoded at X_{W_i} Kb/s, and
 $cost_{X_{W_i}}^{disk}$ is a cost of consumed resources for a stream having a disk access to a file encoded at
 X_{W_i} Kb/s.

11. (Original) The method of claim 1 further comprising:
receiving at least one service parameter.

12. (Original) The method of claim 11 wherein said at least one service parameter
comprises information identifying at least one performance criteria desired to be satisfied by said
at least one streaming media server under the workload.

1 13. (Original) The method of claim 12 wherein said at least one performance criteria
2 specifies a minimum percentage of time that said at least one streaming media server is desired
3 to be capable of supporting the workload.

1 14. (Original) The method of claim 11 wherein said at least one service parameter
2 comprises information identifying a constraint.

1 15. (Original) The method of claim 11 wherein said evaluating further comprises:
2 evaluating whether said at least one streaming media server satisfies said at least
3 one service parameter.

1 16. (Currently Amended) Computer-executable software code stored to a computer-
2 readable medium, the computer-executable software code comprising:

3 code executable in a computer system for receiving workload information for a
4 workload of client accesses of streaming media files from a server; and

5 code executable in the computer system for employing a cost function derived for
6 at least one system configuration from a single file benchmark and a unique file benchmark for
7 evaluating a capacity of the at least one system configuration for supporting the workload,
8 wherein the single file benchmark measures a streaming media server capacity when all clients in
9 a test workload are accessing a single file, and wherein the unique file benchmark measures the
10 streaming media server capacity when each client in the test workload is accessing a different
11 file.

1 17. (Currently Amended) Computer-executable software code of claim 16 further
2 comprising:

3 code executable in the computer system for receiving configuration information
4 for said at least one system configuration.

1 18. (Original) Computer-executable software code of claim 16 wherein said code for
2 evaluating a capacity of at least one system configuration for supporting the workload comprises:
3 code for determining whether said at least one system configuration is capable of
4 supporting said workload in accordance with at least one service parameter.

1 19. (Original) Computer-executable software code of claim 18 wherein said at least
2 one service parameter comprises information identifying at least one performance criteria desired
3 to be satisfied by said at least one system configuration under the workload.

1 20. (Currently Amended) Computer-executable software code of claim 16 further
2 comprising:
3 code executable in the computer system for generating a workload profile for the
4 received workload information.

1 21. (Original) Computer-executable software code of claim 20 wherein the received
2 workload information comprises an access log collected over a period of time.

1 22. (Original) Computer-executable software code of claim 20 wherein said workload
2 profile comprises:
3 for a plurality of different points in time, identification of a number of concurrent
4 client accesses, wherein the number of concurrent client accesses are categorized into
5 corresponding encoding bit rates of streaming media files accessed thereby and are further sub-
6 categorized into either memory or disk accesses.

1 23. (Original) Computer-executable software code of claim 16 wherein said code for
2 evaluating comprises:
3 code for generating a service demand profile for said at least one system
4 configuration.

1 24. (Original) Computer-executable software code of claim 16 wherein said code for
2 evaluating a capacity of at least one system configuration comprises:
3 code for evaluating a capacity of a plurality of different system configurations and
4 determining an optimal one of said plurality of different system configurations for supporting
5 the workload.

1 25. (Previously Presented) A system comprising:
2 means for receiving configuration information for a plurality of different system
3 configurations, wherein the configuration information comprises, for each of the plurality of
4 different system configurations, a corresponding single file benchmark and unique file
5 benchmark, wherein said single file benchmark measures capacity of the corresponding system
6 configuration for serving a population of clients that all access a same file, wherein said unique
7 file benchmark measures capacity of the corresponding system configuration for serving a
8 population of clients that all access different files;
9 means for receiving workload information for a workload of client accesses of
10 streaming media files from a server; and
11 means for evaluating, based on the configuration information, the capacity of each
12 of said plurality of different system configurations for supporting said workload.

1 26. (Original) The system of claim 25 further comprising:
2 means for determining an optimal one of said plurality of different system
3 configurations for supporting said workload.

1 27. (Original) The system of claim 26 wherein said means for determining an optimal
2 one of said plurality of different system configurations for supporting said workload determines a
3 most cost-effective one of said plurality of different system configurations for supporting said
4 workload according to determined service parameters.

1 28. (Currently Amended) A method executed by a computer system, comprising:
2 receiving workload information identifying an expected workload of client
3 accesses of streaming media files from a server over a period of time; and
4 determining a service demand profile for at least one server configuration under
5 evaluation for evaluating a capacity of said at least one server configuration for supporting the
6 expected workload, wherein said service demand profile comprises a plurality of pairs of
7 information, each pair comprising an identification of a duration of time in said period of time
8 and a corresponding computed resource cost of the at least one server configuration for serving
9 the workload over the duration of time.

1 29. (Original) The method of claim 28 further comprising:
2 receiving at least one service parameter.

1 30. (Original) The method of claim 29 wherein said at least one service parameter
2 comprises information identifying at least one performance criteria desired to be satisfied by said
3 at least one server configuration under the expected workload.

1 31. (Original) The method of claim 29 further comprising:
2 evaluating the determined service demand profile for the at least one server
3 configuration to determine whether the at least one server configuration satisfies the received at
4 least one service parameter.

1 32. (Currently Amended) A system comprising:

2 one or more CPUs;

3 a media profiler ~~operable~~ executable on the one ore more CPUs to receive a client
4 access log collected over a period of time for a service provider's site and generate a workload
5 profile for the service provider's site, wherein said workload profile comprises, for a plurality of
6 different points in time, identification of a number of concurrent client accesses, wherein the
7 number of concurrent client accesses are categorized into corresponding encoding bit rates of
8 streaming media files accessed thereby and are further sub-categorized into either memory or
9 disk accesses; and

10 a capacity evaluator ~~operable~~ executable on the one ore more CPUs to receive the
11 generated workload profile and evaluate at least one server configuration's capacity for
12 supporting the site's workload.

1 33 (Currently Amended) The system of claim 32 wherein said capacity evaluator is
2 further ~~operable~~ executable on the one ore more CPUs to receive configuration information for
3 said at least one server configuration.

1 34. (Original) The system of claim 32 wherein in evaluating said at least one server
2 configuration's capacity, said capacity evaluator determines whether said at least one server
3 configuration is capable of supporting the site's workload in accordance with at least one service
4 parameter.

1 35. (Original) The system of claim 34 wherein said at least one service parameter
2 comprises information identifying at least one performance criteria desired to be satisfied by said
3 at least one server configuration under the site's workload.

 36. (Canceled)

1 37. (Original) The system of claim 32 wherein in evaluating said at least one server
2 configuration's capacity, said capacity evaluator is operable to generate a service demand profile
3 for said at least one server configuration.

38. (Previously Presented) The method of claim 1 further comprising:
deriving, by said capacity planning tool, from the single file benchmark and
unique file benchmark, a cost function for measuring the capacity of the at least one streaming
media server for supporting the workload.

39. (Previously Presented) The method of claim 1 wherein said evaluating comprises
computing a service demand for said at least one streaming media server supporting said
workload; and

wherein said computing said service demand comprises computing:

$$Demand = \sum_{i=1}^{K_W} N_{X_{w_i}}^{memory} \times cost_{X_{w_i}}^{memory} + \sum_{i=1}^{K_W} N_{X_{w_i}}^{disk} \times cost_{X_{w_i}}^{disk},$$

wherein the workload W comprises $X_W = X_1, \dots, X_{k_w}$ set of different encoded bit
rates of files served in the workload, $N_{X_{w_i}}^{memory}$ is a number of streams in the workload having a
memory access to a subset of files encoded at X_{w_i} Kb/s, $cost_{X_{w_i}}^{memory}$ is a cost of consumed
resources for a stream having a memory access to a file encoded at X_{w_i} Kb/s, $N_{X_{w_i}}^{disk}$ is a number
of streams in the workload having a disk access to a subset of files encoded at X_{w_i} Kb/s, and
 $cost_{X_{w_i}}^{disk}$ is a cost of consumed resources for a stream having a disk access to a file encoded at
 X_{w_i} Kb/s.

40-41. (Canceled)

42. (Previously Presented) The method of claim 28 further comprising:
deriving, from a single file benchmark and unique file benchmark of the at least
one server configuration, a cost function for computing resource cost of the at least one server
configuration; and
employing said cost function for computing the computed resource cost of the at
least one server configuration for serving the workload over the duration of time.

1 43. (Previously Presented) The system of claim 37 wherein said service demand
2 profile comprises a plurality of pairs of information, each pair comprising identification of a
3 duration of time in said period of time and a corresponding computed resource cost of the at least
4 one server configuration for serving the workload over the duration of time.

1 44. (Currently Amended) A method executable by a computer system, comprising:
2 determining results of a single file benchmark for each of a plurality of encoding
3 bit rates of a single file served by at least a first streaming media server configuration, wherein
4 the result of the single file benchmark for a given encoding bit rate identifies the maximum
5 number of concurrent streams of the single file that the at least a first streaming media server
6 configuration can supply to a population of clients at the given encoding bit rate;
7 determining results of a unique file benchmark for each of said plurality of
8 encoding bit rates, wherein the result of the unique file benchmark for a given encoding bit rate
9 identifies the maximum number of concurrent streams of different files that the at least a first
10 streaming media server configuration can supply to the population of clients at the given
11 encoding bit rate;
12 deriving, from the results of the single file benchmark and unique file benchmark,
13 a cost function;
14 receiving, into a capacity planning tool, workload information for a workload of
15 client accesses of streaming media files from a server; and
16 using, by the capacity planning tool, the cost function for said at least a first
17 streaming media server configuration for evaluating a capacity of the at least a first streaming
18 media server configuration for supporting the workload.